

manufacturer or an identical replacement of such engine shall be subject to the test procedures and standards for the chassis type and model year including visual equipment inspections for all parts that are part of the original or now-applicable certified configuration and part of the normal inspection. States may choose to require vehicles with such engines to be subject to the test procedures and standards for the engine model year if it is newer than the chassis model year.

(2) Vehicles that have been switched from an engine of one fuel type to another fuel type that is subject to the program (e.g., from a diesel engine to a gasoline engine) shall be subject to the test procedures and standards for the current fuel type, and to the requirements of paragraph (d)(1) of this section.

(3) Vehicles that are switched to a fuel type for which there is no certified configuration shall be tested according to the most stringent emission standards established for that vehicle type and model year. Emission control device requirements may be waived if the program determines that the alternatively fueled vehicle configuration would meet the new vehicle standards for that model year without such devices.

(4) Mixing vehicle classes (e.g., light-duty with heavy-duty) and certification types (e.g., California with Federal) within a single vehicle configuration shall be considered tampering.

(e) *SIP requirements.* The SIP shall include a description of each test procedure used. The SIP shall include the rule, ordinance or law describing and establishing the test procedures.

[57 FR 52987, Nov. 5, 1992, as amended at 61 FR 40945, Aug. 6, 1996; 63 FR 24433, May 4, 1998; 65 FR 45533, July 24, 2000; 66 FR 18178, Apr. 5, 2001]

§ 51.358 Test equipment.

Computerized emission test systems are required for performing an official emissions test on subject vehicles.

(a) *Performance features of computerized emission test systems.* The emission test equipment shall be certified by the program, and newly acquired emission test systems shall be subjected to acceptance test procedures to ensure

compliance with program specifications.

(1) Emission test equipment shall be capable of testing all subject vehicles and shall be updated from time to time to accommodate new technology vehicles as well as changes to the program. In the case of OBD-based testing, the equipment used to access the onboard computer shall be capable of testing all MY 1996 and newer, OBD-equipped light-duty vehicles and light-duty trucks.

(2) At a minimum, emission test equipment:

(i) Shall make automatic pass/fail decisions;

(ii) Shall be secured from tampering and/or abuse;

(iii) Shall be based upon written specifications; and

(iv) Shall be capable of simultaneously sampling dual exhaust vehicles in the case of tailpipe-based emission test equipment.

(3) The vehicle owner or driver shall be provided with a record of test results, including all of the items listed in 40 CFR part 85, subpart W as being required on the test record (as applicable). The test report shall include:

(i) A vehicle description, including license plate number, vehicle identification number, and odometer reading;

(ii) The date and time of test;

(iii) The name or identification number of the individual(s) performing the tests and the location of the test station and lane;

(iv) The type(s) of test(s) performed;

(v) The applicable test standards;

(vi) The test results, by test, and, where applicable, by pollutant;

(vii) A statement indicating the availability of warranty coverage as required in section 207 of the Clean Air Act;

(viii) Certification that tests were performed in accordance with the regulations and, in the case of decentralized programs, the signature of the individual who performed the test; and

(ix) For vehicles that fail the emission test, information on the possible cause(s) of the failure.

(b) *Functional characteristics of computerized emission test systems.* The test system is composed of motor vehicle

test equipment controlled by a computerized processor and shall make automatic pass/fail decisions.

(1) [Reserved]

(2) Test systems in enhanced I/M programs shall include a real-time data link to a host computer that prevents unauthorized multiple initial tests on the same vehicle in a test cycle and to insure test record accuracy. For areas which have demonstrated the ability to meet their other, non-I/M Clean Air Act requirements without relying on emission reductions from the I/M program (and which have also elected to employ stand-alone test equipment as part of the I/M program), such areas may adopt alternative methods for preventing multiple initial tests, subject to approval by the Administrator.

(3) [Reserved]

(4) *On-board diagnostic test equipment requirements.* The test equipment used to perform on-board diagnostic inspections shall function as specified in 40 CFR 85.2231.

(c) *SIP requirements.* The SIP shall include written technical specifications for all test equipment used in the program and shall address each of the above requirements (as applicable). The specifications shall describe the testing process, the necessary test equipment, the required features, and written acceptance testing criteria and procedures.

[57 FR 52987, Nov. 5, 1992, as amended at 61 FR 40945, Aug. 6, 1996; 65 FR 45533, July 24, 2000; 66 FR 18178, Apr. 5, 2001]

§ 51.359 Quality control.

Quality control measures shall insure that emission testing equipment is calibrated and maintained properly, and that inspection, calibration records, and control charts are accurately created, recorded and maintained (where applicable).

(a) *General requirements.* (1) The practices described in this section and in appendix A to this subpart shall be followed for those tests (or portions of tests) which fall into the testing categories identified. Alternatives or exceptions to these procedures or frequencies may be approved by the Administrator based on a demonstration of comparable performance.

(2) Preventive maintenance on all inspection equipment necessary to insure accurate and repeatable operation shall be performed on a periodic basis.

(3) [Reserved]

(b) *Requirements for steady-state emissions testing equipment.* (1) Equipment shall be maintained according to demonstrated good engineering practices to assure test accuracy. The calibration and adjustment requirements in appendix A to this subpart shall apply to all steady-state test equipment. States may adjust calibration schedules and other quality control frequencies by using statistical process control to monitor equipment performance on an ongoing basis.

(2) For analyzers that use ambient air as zero air, provision shall be made to draw the air from outside the inspection bay or lane in which the analyzer is situated.

(3) The analyzer housing shall be constructed to protect the analyzer bench and electrical components from ambient temperature and humidity fluctuations that exceed the range of the analyzer's design specifications.

(4) Analyzers shall automatically purge the analytical system after each test.

(c) *Requirements for transient exhaust emission test equipment.* Equipment shall be maintained according to demonstrated good engineering practices to assure test accuracy. Computer control of quality assurance checks and quality control charts shall be used whenever possible. Exceptions to the procedures and the frequency of the checks described in appendix A of this subpart may be approved by the Administrator based on a demonstration of comparable performance.

(d) *Requirements for evaporative system functional test equipment.* Equipment shall be maintained according to demonstrated good engineering practices to assure test accuracy. Computer control of quality assurance checks and quality control charts shall be used whenever possible. Exceptions to the procedures and the frequency of the checks described in appendix A of this subpart may be approved by the Administrator based on a demonstration of comparable performance.